CONTENTS

Climates Prevailing in the Yellow-Gray Earth and Yellow-Brown Earth Zones in New Zealand, F. B. HURST	1
Zealand, F. B. Hurst Gangetic Alluvium of India: Pedochemical Characters of the Genetic Soil Types of	
Gorakhpur District in the United Provinces. R. R. AGARWAL AND S. K. MUKERJI	21
A Soil Aeration Theory Based on Diffusion, C. H. M. van Bavel.	33
The Micronutrient Cations Iron, Manganese, Zinc, and Copper: Their Uptake by Plants from the Adsorbed State, EMANUEL EPSTEIN AND PERRY R. STOUT.	47
A Study of the Infertility of Two Acid Soils. J. M. HESLEP.	67
Books	81
Laterite Developed on Basalt at Inverell, New South Wales. Dorothy Carroll and	01
	87
MARION WOOF. Thermodynamics and Soil Moisture. WILLARD HALE GARDNER, WALTER HALE	
GARDNER, AND WILLARD GARDNER	101
Potassium Removal from Iowa Soils by Greenhouse and Laboratory Procedures. P. F.	
Pratt.	107
Forms and Distribution of Phosphorus in the Horizons of Some Nebraska Soils in	
Relation to Profile Development, W. H. Allaway and H. F. Rhoades.	119
Denitrification in Some California Soils. F. E. BROADBENT	129
Cation-Exchange Capacity of Plant Roots. MACK DRAKE, JONAS VENGRIS, AND WM. G.	
Colby	139
Effects of Organic Mulches on Soil Conditions and Soybean Yields. A. B. S. VERMA AND	
HELMUT KOHNKE	149
Importance of Sodium for Plant Nutrition: V. Response of Crops Other Than Beet.	
J. J. Lenr	157
Books	167
Residual Effects of Phosphorus in Soil at Different pH Levels as Measured by Yield and	
Phosphorus Uptake by Oats. Clayton McAuliffe, George Stanford, and	
RICHARD BRADFIELD	171
Solubility of Iron, Aluminum, Calcium, and Magnesium Inositol Phosphates at Dif-	
ferent pH Values. R. H. Jackman and C. A. Black.	179
Ammonium Fixation and Availability in Harpster Clay Loam. F. E. Allison, Janet	
H. Doetsch, and E. M. Roller	187
Freezing Point of Water in a Soil as Related to Salt and Moisture Contents of the Soil.	
A. D. AYERS AND R. B. CAMPBELL	201
Effect of Salinity on Moisture Content and Freezing-Point Depression of Soil at	00=
Permanent Wilting of Plants. D. W. HENDERSON. Estimation of Exchangeable Cations in Soils with the Beckman Flame Spectropho-	207
tometer, M. Fieldes, P. J. T. King, J. P. Richardson, and L. D. Swindale	219
A Method for Calculating the Saturation Percentage from the Weight of a Known	219
Volume of Saturated Soil Paste, L. V. Wilcox	233
Water Absorption and Transpiration by Leaves, E. L. Breazeale, W. T. McGeorge,	2.313
	239
AND J. F. BREAZEALE Theory of Probability and Size Distribution of Soil Aggregates. Paul W. Evans	245
Books	249
Ionic Activities in Ion-Exchange Systems. K. L. Babcock, L. E. Davis, and Roy	
Overstreet	253
Hydrolysis of Iron, Aluminum, Calcium, and Magnesium Inositol Phosphates by	,
Phytase at Different pH Values. R. H. Jackman and C. A. Black	261
Availability of Molybdenum as Influenced by Liming. W. O. Robenson, Glen Edging-	
TON, W. H. ARMIGER, AND A. V. BREEN	267

Mineral Composition of Orehard Grass Grown on Pachappa Loam Salinized with Various Salts. C. H. Wadleigh, H. G. Gauch, and Maria Kolisch	275
Compatibility of Rhizobia with Seed Protectants. MARCIA RUHLOFF AND JOE C.	
Burton	283
Burton A Technique for Measuring Soil-Moisture Tensions in Rapidly Changing Systems. R. D. Miller	291
Relation of Manganese to the Carotene and Vitamin Contents of Growing Crop Plants.	-
O. J. Burger and S. M. Hauge	303
Ionization of Soils and Soil Colloids: I. Methods for Simultaneous Determination of	
Two Cationic Activities. E. O. McLean, S. A. Barber, and C. E. Marshall	315
Low-Pressure Control for Moisture-Release Studies. George R. Blake and Arthur	
T. Corey	327
Diffusion Characteristics of 1-3 Dichloropropene and 1-2 Dibromeothane in Soils.	
J. J. Siegel, A. E. Erickson, and L. M. Turk	333
Vapor-Phase Sterilization of Soil with Ethylene Oxide, L. E. Allison	341
Anion-Exchange Chromatography of Inositol Phosphates from Soil. Donald H. Smith	
AND FRANCIS E. CLARK	353
Cation Exchange in Soils: I. Ammonium Fixation and Its Relation to Potassium Fixa-	
tion and to Determination of Ammonium Exchange Capacity, Isaac Barshad	361
Ionization of Soils and Soil Colloids: II. Potassium-Calcium Relationships in Mont-	
morillonite Group Clays and in Attapulgite, S. A. Barber and C. E. Marshall.	373
Properties of Soil which Influence Wind Erosion: IV. State of Dry Aggregate Structure.	
W. S. Chepil	387
Books	403
Science Groups to Meet.	
Organic Matter and Nitrogen Buildup in Some Puerto Rican Soil Profiles. R. M. SMITH, GEORGE SAMUELS, AND C. F. CERNUDA.	
Desiccator Method for Determining Permanent Wilting Percentages of Soils, J. J.	
LEHANE AND W. J. STAPLE	429
Ionic Saturation of Plant Roots with Special Reference to Hydrogen, E. R. Graham	
AND W. L. BAKER	
Effect of Moist Heat and Pressure on Soils, Balwant Rai Puri and K. K. Midha	
Determination of Calcium and Magnesium in Soil and Plant Material. Kuang Lu	
CHENG AND ROGER H. BRAY	449
Phosphate Fertilizers for the Texas Blacklands: I. Relative Availability of Various	
Phosphatic Fertilizers. Robert J. Speer, Seward E. Allen, Margaret Maloney	
AND AMMARETTE ROBERTS.	
Properties of Soil Which Influence Wind Erosion: V. Mechanical Stability of Structure	
W. S. Chepil. Books	
Index	185